

S.Y.M.Sc.(Electronics) Fourth Semester Old+CBCS
**ELE404 / PSELT404.2-Paper-IV (PSELT404-SEC4) - Mobile and Satellite
Communication**

P. Pages : 2

Time : Three Hours



GUG/W/18/11374

Max. Marks : 80

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- Notes : 1. All questions are compulsory and carry equal marks.
2. Draw neat diagram wherever necessary.

1. Either.

- a) What are limitations of conventional mobile telephone system? **8**
Explain a basic cellular system.
- b) Explain the following elements of the cellular mobile radio system design : **8**
i) Maximum number of calls per hour per cell,
ii) Maximum number of frequency channels per cell.

OR

- c) Explain the concept of 'frequency reuse channels'. **8**
- d) Discuss space polarization. **8**

2. Either.

- a) Explain interfacing of mobile with computer. **8**
- b) Explain the working of following subsystems of GSM architecture: **8**
i) Base station subsystem, and
ii) Network and switching subsystem.

OR

- c) Explain the mobile handset as modem. **8**
- d) Explain the following features of GSM handset. **8**
i) SMS, and ii) Security.

3. Either.

- a) Explain what the terms 'Centrifugal' and 'Centripetal' mean with regard to a satellite in orbit around the earth. **8**
- b) Explain the functions of a controlling earth station to satellite. **8**

OR

- c) Under what circumstances are regional or domestic satellite systems likely to be used? **8**
In what ways do they differ from world wide satellite systems?

d) Discuss the satellite communication system. 8

4. Either.

a) Explain TDMA system. 8
State advantages of TDMA system over FDMA system.

b) What is CDMA system? 8
Explain power control mechanism in CDMA system.

OR

c) Explain Earth's path propagation effects in satellite communications. 8

d) Explain following satellite services: 8
i) Weather forecasting and ii) Remote sensing.

5. a) What is space polarization? Explain. 4

b) Explain application of mobile handset as data storage device. 4

c) What is noise temperature? Explain. 4

d) Write short note on DTH service. 4
